applicants and reflects recent trends favoring endovascular treatment. For trainees, EVAR appears to have reached a plateau but open aortic case volume continues to decline. Case volume has a significant positive association with QE performance but not RE performance. There was substantial regional variation in the operative logs of RE applicants. The endovascular experience of RE applicants has risen significantly over the past 7 years.

Conclusions: 1) The operative experience of recent vascular surgery trainees is appropriate for career expectations as reflected by scope and complexity of contemporary vascular surgery practice. 2) Endovascular procedures have been rapidly incorporated into clinical practice by the majority of vascular surgeons applying for recertification despite substantial regional heterogeneity.

	QE%>0	*RE%>0*	*p*	*QE MEAN*	*RE MEAN*
AAA-Rupt	88	58	0.0001	3	2
AAA-Elec	100	98	NS	14	4
Thoracic Open	30	11	0.0001	0	1
Thoracoabd	81	17	0.0001	2	2
CEA	100	98	NS	47	22
AFBG	77	78	NS	2	3
FP Vein	98	82	0.0001	9	4
1st Rib	73	16	0.0001	2	2
EVAR	100	78	0.0001	44	12
IVCF	93	72	0.0001	16	11

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VS 7.

Video Presentation
Technique for Supraceliac Balloon Aortic Control During EVAR for Ruptured Abdominal Aortic Aneurysms

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Background: EVAR is used increasingly to treat ruptured abdominal aortic aneurysms (RAAAs) with mixed results. Approximately 20% of RAAA patients suffer complete circulatory collapse (arterial blood pressure < 40 mm Hg) before or during the procedure. Their survival depends on obtaining and maintaining continuously first supraceliac and then infrarenal aortic balloon control until the endograft is fully deployed and the aneurysm excluded. We have developed a technique for doing this and used it successfully in 17 cases in which EVAR was performed for a RAAA in patients with complete circulatory collapse. In this video the complex sequence of steps needed to obtain and maintain continuous aortic balloon control is demonstrated in a glass model.

Technical Description: A long large sheath is inserted through the left femoral artery to place and support the large compliant first aortic occlusion balloon. With this inflated balloon in place, the body and right limb of a modular endograft is fully deployed through the right femoral artery. A second balloon is placed via the right femoral artery within the graft body to maintain aortic control while the first balloon is removed through its sheath. The remaining components of the endograft are deployed to fully exclude the aneurysm. If iliac aneurysms are present, complete aneurysm exclusion with continuous aortic control may require placement and inflation of a third balloon inserted via the left femoral artery into the body of the graft as the second balloon is removed. This technique of balloon aortic control improves the outcome of EVAR for RAAAs.

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SS37.

Standardization Is Superior to Traditional Methods of Teaching Simulated Vascular Anastomoses

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Objectives: Standardizing surgical skills teaching has been proposed as a method to rapidly attain technical competence. This study compared acquisition of vascular skills by standardized vs traditional teaching methods.

Methods: Eighteen first-year surgical residents were randomized to a standardized or traditional group. Participants were taught technical aspects of vascular anastomosis using femoral anastomosis simulation (Limbs&Things©), supplemented with factual information. One expert instructor taught a standardized anastomosis technique to one group over four sessions, while, similar to current vascular training, four different expert instructors each taught one session to the other (traditional) group. Knowledge and technical skill were assessed at study completion using objective performance metrics (OSATS) by an independent vascular expert. Participants also provided written evaluation of the study experience.

Results: The standardized group had significantly higher overall technical (mean 95.7% vs 75.8%; $p = 0.038$) and global skill scores (mean 83.4% vs 67%; $p = 0.006$).

Tissue handling, efficiency and flow of operation were rated significantly higher in the standardized group (mean range 88 to 96% vs mean range 67.6 to 77.6%; $p < 0.05$). The standardized group trended to better cognitive knowledge (mean 68.8% vs 59.4%; $p = 0.182$), creating a secure initial knot, following the curve of the needle through tissue, placing sutures accurately (70% vs 25%; $p = 0.08$) and securing the anastomosis at completion (100% vs 75%; $p = 0.183$). 72% of participant evaluations suggested preference for a standardized approach.

Conclusions: Standardization of teaching leads to greater competency and excellent trainee acceptance when performing a simulated vascular anastomosis. Transferability of simulator-acquired skills to actual clinical settings will be required before open simulation can be unequivocally recommended as a major component of resident technical skill training.

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PVSS13.

Acute Mesenteric Ischemia: A Comparison of Endovascular Revascularization to Traditional Therapy

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Objectives: Few centers have adopted endovascular therapy for the treatment of acute mesenteric ischemia. We sought to evaluate the impact of endovascular therapy on outcomes for the treatment of acute mesenteric ischemia (AMI).

Methods: A single center, retrospective cohort review was performed on all consecutive patients with thrombotic or embolic AMI presenting between 1999-2008. Patients with mesenteric venous thrombosis, non-occlusive mesenteric ischemia, and ischemia associated with aortic dissection were excluded. Demographic factors, preoperative metabolic status, and etiology were compared. Primary clinical outcomes included endovascular technical success, operative complications, and in-hospital mortality.

Results: Seventy consecutive patients were identified with AMI. Mean age was 64 ($\pm$ 16) years; etiology of mesenteric ischemia was 65% thrombotic and 35% embolic occlusions. Endovascular revascularization was the preferred treatment (81%) vs operative therapy (19%). Successful endovascular treatment was achieved in 87%. Endovascular therapy required laparotomy in 69% vs traditional therapy 100% ($p < 0.05$) with a median 52cm necrotic bowel resected (Interquartile range (IQR): 11-140cm) vs 160cm (IQR: 90-250cm, $p < 0.05$), respectively. Acute renal failure and pulmonary failure occurred less frequently with endovascular therapy (27% vs 50%, $p < 0.05$ and 27% vs 70%, $p < 0.05$). Endovascular treatment resulted in a mortality rate of 39% compared to 53% ($p < 0.05$) with traditional therapy. Successful endovascular treatment equated to a mortality of 36%, whereas the mortality for endovascular failures was 50%. Endovascular therapy was associated with improved mortality in thrombotic AMI (Odds Ratio = 0.10, 95% Confidence Interval; 0.10-0.76, $p < 0.05$).

Conclusions: Endovascular therapy has altered the management of AMI, and there are measurable advantages to this approach. Utilizing endovascular therapy as the primary modality for AMI reduces complications and improves outcomes.

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PVSS17.

Routine Venography Following Transaxillary First Rib (FRRS) Resection for Subclavian Vein Thrombosis Ensures Excellent Outcomes and Vein Patency

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Objectives: The purpose of this study is to assess the role of routine postoperative venography in patients who have undergone FRRS for subclavian vein thrombosis by evaluating long-term vein patency using imaging by duplex scan.

Methods: Patients treated with FRRS undergo a venogram 2 weeks postoperatively. The subclavian vein is dilated if there is a >50% stenosis and those patients are then anticoagulated. If no stenosis is seen, anticoagulation is stopped. If the vein is occluded, anticoagulation is continued for 6 months or until the vein recanalizes.

Results: Eighty four patients (42 males and 42 females) underwent FRRS between 12/03 and 11/09. Forty-eight patients with stenotic veins underwent dilation; 4 had acute thrombus and were lysed as well as dilated and 3 thrombosed following the venogram and were anticoagulated. All patients remained on anticoagulation on average for 2 (1-5) months. Twenty-ne patients had patent veins and remained open in the follow-up period. Chronically occluded veins were seen in 16 patients. They remained on anticoagulation for an average of 3 (1-8) months and 14 patients recanalized following FRRS in the first 6 months. Percent patency by Kaplan Meier is seen in the graph. In follow-up, symptomatic restenosis was seen in 3 patients and those veins were redilated. Two patients had late occlusions at 2 years. These 5 patients were all in the dilated group.